

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In Re Application of:**

Muthiah Manoharan, Phillip Dan Cook and  
Clarence Frank Bennett

**Serial No.:** Not Yet Assigned

**Group Art Unit:** Not Yet Assigned

**Filed:** Herewith

**Examiner:** Not Yet Assigned

**For:** DERIVATIZED OLIGONUCLEOTIDES HAVING IMPROVED UPTAKE AND  
OTHER PROPERTIES

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**PRELIMINARY AMENDMENT**

Prior to examination of the above-identified application, Applicants  
respectfully request that the following amendments be entered.

**In the Claims:**

Please ADD the following new Claims 45 through 53.

--45. A method of effecting cellular uptake of a compound having a plurality  
of linked nucleosides, comprising contacting an organism with said compound wherein said  
compound includes at least one heterocyclic base functionalized nucleoside having a steroid  
molecule, an enzyme, a peptide, a protein, or a vitamin, linked to the heterocyclic base of the  
nucleoside.

46. The method of claim 45 wherein said heterocyclic base functionalized  
nucleoside is functionalized with a steroid molecule.

47. The method of claim 45 wherein said heterocyclic base functionalized nucleoside is functionalized with an enzyme, a peptide or a protein.

48. The method of claim 45 wherein said heterocyclic base functionalized nucleoside is functionalized with a vitamin.

49. A method of effecting cellular uptake of a compound having a plurality of linked nucleosides, comprising contacting an organism with said compound wherein said compound includes at least one inter-strand nucleoside having a steroid molecule, an enzyme, a peptide, a protein, or a vitamin linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

50. The method of claim 49 wherein said inter-strand nucleoside has a steroid molecule linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

51. The method claim 50 wherein said inter-strand linkage is not the inter-strand linkage between the first and the second nucleosides at the 3' terminus or the 5' terminus of said oligonucleotide.

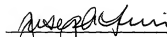
52. The method of claim 49 wherein said inter-strand nucleoside has an enzyme, a peptide or a protein linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

53. The method claim 49 wherein said inter-strand nucleoside has a vitamin linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.--

## REMARKS

Claims 45 through 53 have been added.

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